DOCUMENT RESUME

ED 476 974 IR 021 702

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TITLE	Kids Can Care about Cyberethics!
PUB DATE	2002-06-00
NOTE	7p.; In: ED-MEDIA 2002 World Conference on Educational Multimedia, Hypermedia & Telecommunications. Proceedings (14th, Denver, Colorado, June 24-29, 2002); see IR 021 687.
AVAILABLE FROM	Association for the Advancement of Computing in Education (AACE), P.O. Box 3728, Norfolk, VA 23514. Tel: 757-623-7588; e-mail: info@aace.org; Web site: http://www.aace.org/DL/.
PUB TYPE	Reports - Descriptive (141) -- Speeches/Meeting Papers (150)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	*Children; Computer Literacy; *Elementary Secondary Education; *Ethics; *Internet; Librarian Attitudes; Media Specialists; *Student Developed Materials ; Teacher Attitudes
IDENTIFIERS	Clip Art; *Communication Ethics; *Media Ethics

ABSTRACT

This paper is a discussion of the importance of teaching cyberethics to K-12 students. The paper includes the results of two informal surveys: one of teachers and librarians regarding their experiences with cyberethics instruction, and one of students regarding their knowledge of cyberethics. A description of a school-wide project to emphasize cyberethics through a web collection of student created clip art is also included. Includes an annotated bibliography of 11 sources. (Author)

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Kids Can Care About Cyberethics!

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Abstract This paper is a discussion of the importance of teaching cyberethics to K-12 students. It includes the results of two informal surveys: one of teachers and librarians regarding their experiences with cyberethics instruction, and one of students regarding their knowledge of cyberethics. A description of a school-wide project to emphasize cyberethics through a web collection of student created clip art is also included.

Introduction

Computer ethics, or cyberethics, is an area of technology education that is frequently neglected by teachers, librarians, and administrators. Students are using computers in ever-growing numbers, but in many schools are receiving little or no guidance about the issues relating to ethical use of technology. Defining cyberethics, whether for adults or for students, is a bit daunting because the term covers a multi-faceted array of issues, including at least the following: respect for intellectual property, respect for privacy, and hacking. Indeed one expert, Dr. Marvin Berkowitz, has included seven specific issues: computer hacking, copyright issues, hate speech, privacy, computer addiction, plagiarism, and personal identity.

Discussion

Part of the reason why students are not being offered information about cyberethics is because the adults who should be leading the way are themselves uninformed. Many publications, workshops, and technology courses do present information to educators about cyberethics. Unfortunately, as with other areas of professional development, too often people do not receive training due to lack of time, lack of access to workshops or seminars, or lack of awareness of these issues. Teachers and librarians must become informed leaders in this arena before they can help students to make changes.

Recently, I explored the issue of cyberethics and its emphasis in schools through an informal survey of teachers and librarians. The survey was directed to members of LM_Net and EDTECH discussion groups, and also to library science students. I posed questions about how ethical issues were handled with teachers and staff, and also about how these issues were addressed with students at their schools. I received thirty-four responses, with equal representation from librarians and classroom teachers.

I asked eight questions about the ways in which cyberethics was addressed on campuses with faculty and staff:

- Who is the voice for copyright and/or respect for intellectual property on your campus? A three to one ratio of responses pointed to the librarian or media specialist as the responsible spokesman. One notable exception was an individual who reported that her district had a specific position, Copyright Compliance Officer, who monitored copyright issues and situations. That administrator then directed training to librarians, who served as campus liaisons. Other comments about the role of librarian as champion of copyright included, "If anyone is going to do this, it will be me, the librarian."
- Are copyright notices posted on your campuses? Less than half of the respondents said yes, with the majority indicating notices were posted on or near photocopy machines. Unfortunately, this simple step does seem to be neglected in a number of schools.
- Who is the voice on your campus for protection of computer software? Responses to this question were evenly split between the librarian and the campus technology teacher or

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specialist. Only two individuals indicated a direct knowledge of a district wide emphasis on compliance in this area. Many people said the issue was not addressed at all at their schools.

- How widespread is the violation of software copyright by teachers and staff on your campus? Almost all respondents reported that it was their impression that copyright was respected in most cases. Several people reported campus guidelines and policies. As one computer teacher commented, "The fines for piracy are well known here." Another technology teacher offered a somewhat jaded comment, "I would not think it is very much as our school has provided the necessary software for its teachers. If the software is not provided, teachers will violate copyright laws." Many respondents were unaware of what measures were taken to protect software copyright in their buildings or districts.
- Who is the voice for privacy regarding technology, and is this issue taken seriously? As with the responsibility for software copyright, the vote was split between librarians and technology teachers. This is an issue that seems to elicit growing awareness and concern. Some respondents said building and district administrators supervised privacy issues. Several librarians pointed out that their automated circulation systems did not save student checkout records, thus making it easier to protect students' reading histories.
- Who speaks out against computer hacking and in what context? This issue was, in most cases, said to be under the domain of technology specialists and teachers. In many cases, respondents also mentioned the district acceptable use policy as a measure against hacking.

The second part of the survey was about how cyberethics are being taught to students, and comprised of five questions:

- Who tell students about copyright? As with informing faculty, the responsibility for telling students about copyright fell almost entirely to librarians. Most computer teachers who responded also reported that they try to include copyright in their lessons, but also named librarians as campus leaders. One librarian said she mentions copyright every time a class comes in for research during her introductory remarks.
- Who talks to students about software and copyright? Librarians and computer teachers were equally cited. However, about one third of the respondents were under the impression that it was not addressed at all on their campuses.
- Who talks to students about computer hacking as an ethical issue? For the most part, computer teachers were named as the voices for this issue. One such teacher commented, "We attempt to assuage the hackers by keeping a half step ahead of them. We don't always succeed! However, I have learned a lot from the kids when security is breached." Teachers and librarians from schools with strong acceptable use policies felt that guidance for students was enhanced by the policies, if students were sufficiently aware of them.
- Are there specific lessons taught about cyberethics on your campus? About half of the respondents said yes, but not necessarily to all students. Usually the lessons were offered in computer classes. The remainder said such lessons were not offered at all. Some of those who said yes mentioned state computer competency tests, which target these issues along with other computer skills, as the impetus for instruction in cyberethics.
- The final question was: In general, is your campus really pushing ethical issues? Responses were evenly split, with half saying the issues were truly emphasized and the other half saying not at all. Some were emphatic in stating that the issues were neglected. One respondent said, "Not enough time. Just trying to teach the basic subjects is the problem." Another said, "Mostly no. It is not a subject that fits into class lessons or requirements." On the other hand, a computer teacher reported, "At this point we are stressing the responsibility of the staff member. In a faculty meeting the medial specialist goes over both our acceptable use policy and copyright policy every school year." There were indications from several people of a growing sense of need for instruction about cyberethics. As one reported, "This year one of our goals is to raise awareness through improved signage, reminders to staff, and workshops with students." Another said, "It is difficult to find the staff and time to cover everything that needs to be discussed, but we are making an effort."

What conclusions can be drawn from this informal survey? Several points came to mind as I reviewed the responses:

- First, I did not receive a single submission where the respondent thought that enough was being done at his or her school to address cyberethics. Everyone reported room for improvement. As computer use becomes more universal and pervasive, the need for adequate training about cyberethics will surely increase.
- Librarians are presently front and center in efforts to inform faculty and students about cyberethics, and this will continue to be the case. The general consensus from respondents was that if anyone on their campus were going to speak out on such issues, it would be the librarian.
- One thing that could be done easily and quickly would be to post signs with copyright guidelines near copy machines, computers, software shelving, and audiovisual equipment storage areas. This beginning step can provide initial awareness of the issue with other initiatives to follow.
- An AUP (Acceptable Use Policy) is an important first step in promoting ethical computer use, but it is not a solution in and of itself. Many respondents indicated that, while their schools had such documents, awareness on the part of students, parents, and faculty was not widespread.
- While instruction about cyberethics may be lacking, there is a growing awareness and concern. In the near future, librarians and teachers will need to address these issues with both faculty and students if they are not already doing so.

Librarians are in an excellent position to be leaders in promoting cyberethics because they work with staff and students, because they assist with research, and because they are often leaders in technology on their campuses. Training and informing teachers and staff should be offered through a variety of means, such as: in-service, web presence, handouts, one-on-one contacts, and any other creative means which can be developed. Often it is best to concentrate on one issue at a time when launching efforts to inform people about cyberethics, to avoid overwhelming them with information and guidelines. The emphasis should be on positive reasons to respect the issues rather than negativism or scare tactics. Once teachers on a campus begin to gain awareness, they can plan lessons to share the information with their students.

What are some effective ways to teach students about ethical computer use? As with adults, students will do best if they are not presented with an overwhelming amount of information all at once. After a general discussion, it is probably wise to present one issue at a time and explain each one simply and clearly. Students are even less apt than adults to respond to stern admonishing rhetoric. While it may be true, for instance, that stealing ideas or words is as bad as stealing merchandise from a store, lecturing students along these lines is likely to be poorly received and counter-productive. Teachers should explain each concept thoroughly, making it clear exactly what rights students do have and offering positive reasons for behaving ethically. This approach is much more likely to succeed in gaining students' attention and compliance. Students may be informed of the negative consequences of violating ethical guidelines, of course, but the information should be accurate and not couched in overly threatening tones.

Usually a school or district will have an Acceptable Use Policy (AUP) that addresses ethical issues for its students and staff. Unfortunately, in many cases, students and faculty are not thoroughly informed about their policy and may even be unaware of its existence. Making sure they get this basic information is one way to begin discussing cyberethics. Then the various sub topics can be addressed one at a time. One Texas school district, Conroe Independent School District, developed a test for students over the Acceptable Use Policy. The test was put into place as a requirement before students could gain permission to use the Internet. Teachers and staff were also required to pass the same test and answer additional questions about their responsibilities in order to get computer accounts. This tactic required everyone to have at least a basic awareness of district policies and gave teachers a starting point for instruction. The tests were made available online via the district web pages, to be taken online with the resulting passing scores stored in a database so that teachers could check, if necessary, to verify whether a student has passed. If such a requirement is not in place, a district Acceptable Use Policy is still an excellent springboard for discussions about cyberethics.

Another major resource to reference when discussing computer ethics with both teachers and students is the Ten Commandments of Computer Use. This widely quoted document was originated by The Computer Ethics Institute, and appears at the end of this paper. Doug Johnson, Director of Technology, Mankato Public Schools, Mankato, MN, has further synthesized ethical concepts into his "3 P's of Technology Ethics:

1. Privacy—I will protect my privacy and respect the privacy of others.

2. Property—I will protect my property and respect the property of others.
3. a(P)priate Use—I will use technology in constructive ways and in ways which do not break the rules of my family, church, school or government.

Exposing students to clear and understandable guidelines such as these is instrumental in gaining their comprehension and compliance.

Respect for intellectual property is an obvious starting point for discussing cyberethics with students, since it is an ongoing and increasing problem. Students have been copying information for school assignments forever, of course, but it has never been eas ier than it is today. Sites that sell or give away complete research papers abound on the net. A quick search engine query brought up such sites as BuyPapers.com, ResearchPapers.com, CustomWriting.com and SchoolSucks.com, offering some instantly downloadable papers free and others for nominal charges. Students can easily cut and paste any amount of text from a digital reference and add it to their own work. In a recent New York Times article, Dr. Donald McCabe described his surveys regarding student plagiarism in high school. He reported that more than half of students surveyed in one project reported downloading an entire paper or a substantial amount of text and pasting into a piece of work without citation. He went on to describe how some enterprising high school and college students have mastered the art of pasting copied text into a word processing application, using the program's auto-summarize feature, and then pasting the summarized results into their own papers in an attempt to foil the teacher's efforts to detect plagiarism. Dr. Jamie McKenzie, editor of From Now On, The Educational Technology Journal, suggests that such widespread student copying is indicative of "mental softness," which results in the "cut and paste mentality." Teachers need to combat such plagiarism in order to encourage students to really learn from their research and the experience of creating final products.

One of the best ways to combat these sorts of creative plagiarism is to give assignments that do not lend themselves to copying. The old standby assignment to write a three-page report on a given topic almost cries out to students to plagiarize. Having students present their final product in the form of a multimedia presentation, newsletter, annotated bibliography, or some other format precludes cutting and pasting if the assignment is designed carefully with that as one goal. Also, teachers and schools can use services such as TurnItIn.com, plagiarism detection software that scans student work and checks for plagiarized text. In order to really combat plagiarism, though, teachers and librarians must teach students that they should not plagiarize regardless of the nature of the task assigned, as well as find ways to detect or discourage their doing so.

Respect for intellectual property does not apply only to words. One area of concern regarding plagiarism is the use of graphics and images. As with words, pictures can easily be copied and pasted into reports. They are even more likely to be appropriated for multimedia productions, where the student may be less apt to copy text. Often students and teachers do not even think about the fact that copying artwork, photographs, and other images can also be defined as plagiarism.

This particular type of plagiarism raised concern in one Conroe ISD school, York Junior High, where the librarian noticed how frequently students were copying and using images without any regard for citing their sources. The librarian and two art teachers teamed up to increase student awareness of the principle of respect for intellectual property and graphics. They developed a lesson and a project to provide a positive alternative to copying images. The lesson covered copyright basics, and the project was to build a collection of student generated clip art to be given away royalty free as a service to other students and teachers. On the first day of instruction, the librarian led a discussion about copyright and gave short quiz to test students' awareness of the issues. Before the lesson, students were unaware of fair use and actually thought they had fewer rights to use copied words and images than they do. They were also uninformed about when and how to cite sources. The tests results and other class discussion focused on positive reasons to honor other people's work. The teacher and librarian asked students to put themselves in the place of an artist and imagine how they would feel to find their work taken, and even marketed by someone else. Another reason to honor copyright that students seemed to accept, was that it encourages original work. If there were not copyright, the librarian suggested, we would never hear a new song or see a new work of art. Everyone would use the same old things over and over, with only slight variations or adaptations.

Before they began work, students were given a brief waiver to sign that waived their royalty rights to drawings contributed to the site. Students were told not to submit anything that they might someday want to market, such as an original cartoon character that they might want to develop in the future. The class brainstormed various topics for drawings such as academics, sports, animals, holidays, nature, fun, sports, and others. By the end of class discussion, they were thinking about ideas for images to create.

During the second class session, the students worked on clip art to contribute. The art teacher gave each student a four-inch square of white paper, and told students to fold the squares into fourths. Then she directed them to create drawings to fill each of the four one-inch squares, using colored markers, map colors, or crayons. The librarian brought in picture books to help generate ideas, but reminded students that work should be entirely original. Two areas of concern were gang related drawings and reproducing of cartoon characters not well known to the teachers. Students were reminded to avoid commonly used images in gang graffiti, and to refrain from reproducing look-alikes of popular cartoon and animated characters. Before posting any pictures, the school's police officer reviewed images for gang connotations. Students had two class periods to work on the pictures and could work on them at home as well. The resulting products were clever and colorful. Student assistants and the librarian worked together to scan the images and post them to web pages. The only editing done to images was to remove smudges or stray marks. Otherwise, any picture accepted for use was posted without digital altering. After completing the web pages, the librarian and teachers unveiled them to the school with much fanfare and praise for the unselfish sharing and original work on the part of all participating students. Quickly images started to appear on school web pages, teacher made handouts, in the school newspaper, and in student projects. Students continued throughout that year and subsequent years to add images. During fall 2001, due to the world situation, students decided patriotic images would be an especially important category. This additional collection grew rapidly with other topics receiving additions as well, and new topics being added as needed. Students expressed pride in their clip art collection and enjoyed seeing their images used by teachers and fellow students. They also enjoyed sharing the work with their families and friends via the school web site.

During the 2001-2002 school year the librarian and computer teacher decided to expand the clip art collection and involve computer students as well as art students, and to encourage submissions of computer generated artwork. They presented much of the same information to the students as the art teacher, but because the computer teacher wanted to take the students beyond the issue of plagiarism, the quiz also covered the issues of hacking and respect for privacy. Again results showed that students were unclear on many of the issues, and the discussion that followed focused on clarifying misconceptions. Students reviewed the existing clip art collection and agreed to increase and add dimension to the collection by contributing computer created creations. They signed release forms, as had their classmates in art class, allowing their work to be shared freely. The resulting images have increased the size and variety of the collection and have encouraged participation by additional students.

Conclusion

Today's children are growing up with computers in their schools and homes. Dr. Marin Berkowitz asserts that educators should not wait until high school or even junior high to talk to students about cyberethics. He suggests that 9-12 year old children can grasp basic issues and benefit from lessons about the ethical, legal, and safety issues related to computer and Internet use. Realizing this goal involves informing educators, incorporating the issues into instruction, and making ongoing awareness an integral part of how we instruct students regarding the responsible use of technology.

Helpful Websites: An Annotated Bibliography

Copyright Tips and Issues, West Loogootee ISD, West Loogootee, Indiana
http://www.siec.k12.in.us/~west/online/copy.htm
This page offers many helpful links and considerations for planning an Internet web page and paying particular attention to the ethical issues involved.

Crash Course in Copyright:
http://www.utsystem.edu/OGC/IntellectualProperty/cprtindx.htm#top
This University of Texas site lives up to its title in presenting basic issues related to intellectual property and copyright for the layman.

The Cyber Citizen Partnership Page
http://www.cybercitizenship.org/
This site, created with a grant from the U.S. Department of Justice, is dedicated to teaching children safe and responsible use of the Internet.

Ethics in Computing:

http://courses.ncsu.edu/classes/a/computer_ethics/

The first page of this project is a site map resembling an actual map, with regions marked off for various ethical issues such as computer abuse, intellectual property, and privacy. Clicking on the locations leads to articles and activities relating to the respective issues.

From Now On: The Educational Technology Journal

http://www.fno.org

Jamie McKenzie, author and consultant, edits and publishes this web journal which has a number of excellent articles relating to technology and ethics.

Homepage for Doug Johnson, Author, Speaker, and Consultant on School Library Media Center Issues

http://www.doug-johnson.com/index.html

Doug Johnson, Director of Media and Technology at Mankato Schools, offers articles and activities related to ethics and technology.

Internet Do's and Don'ts

http://www.usdoj.gov/kidspage/do-dont/kidinternet.htm

The U.S. Department of Justice sponsors this site which stresses safe and responsible Internet use.

Original K-12 School Student Clip Art

http://www.shsu.edu/~lis_mah/documents/clipartportal.html

This is the royalty free clipart collection described in the article, created by students and teachers at York Junior High School, Conroe Independent School District, Texas.

Technology and Learning's Copyright Primer: Fair Use Copyright Quiz

http://www.halldavidson.net/Quiz%20.pdf

This pdf document is an interesting quiz for teachers and librarians, with answers provided.

The Ten Commandments of Computer Ethics:

http://www.cpsr.org/program/ethics/cei.html

This is the official web site for this document, offered by the Computer Ethics Institute.

Web Awareness: Knowing the Issues:

http://www.media-awareness.ca/eng/webaware/home.htm

Canada's Media Awareness Network offers this site. It has information and activities for students, parents, and educators regarding the Internet and ethical issues.

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